

California Monthly Climate Summary November 2011

Weather Highlights

November 2011 was a colder and drier than average month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 46.2°F which is 1.9°F lower than the long-term average of 48.1°F. A copy of the California Climate Tracker Temperature plot for November mean temperature departures is copied at the end of this document. With a statewide average of 1.57 inches, precipitation in November was 55% of average.

November started with a storm system bringing snow to the Sierra and cold temperatures to the northern part of the State. The southern part of the State was not affected. A second system at the end of the first week brought precipitation to the whole State. The remnants of first week's second system led to scattered showers to start the second week. Another system passed through the State around Veteran's Day bringing more precipitation. Heavy rain was reported in San Diego County during this event. High pressure built over the State during the third week with temperatures in the south part of the State rising into the 80's. Another system slid down the coast towards the end of the week bringing more rain to the southern part of the State. Thanksgiving week saw another storm system pass through dropping more rain on the State. High pressure built in behind this system creating valley fog in the northern and central parts of the State and warm weather in the southern part of the State.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 86 temperature records tied or broken and 8 precipitation records tied or broken for the month. Of the 86 temperature records set, 37 were for new low minimum temperatures and 28 were for new low maximum temperatures. Records were set over 18 days of the month. Red Bluff broke a 1936 record with a new low temperature of 33°F. The old record was 35°F. On November 20th, Santa Barbara set a new precipitation record for the day when 2.00 inches of rain fell. The old record for the day was 1.42 inches set back in 1961. On November 23rd, Crescent City set a new daily precipitation record when 2.64 inches fell. This beat the old record of 2.60 set back in 1960. On November 27th, Santa Ana tied a 1922 record with a high temperature of 86°F. Bishop had a very notable November. November 2011 tied 2003 as the 4th coldest November in Bishop's record keeping with an average temperature of 40.5°F. The three colder years were 1994 (37.2°F), 2000 (39.9°F), and 1982 (40.4°F). In addition to the cold, Bishop recorded an all-time November wind gust twice. On November 18th, the record was set the first time with a 59 mph gust. Then on the 30th, a 60 mph gust blew through. Bishop also set a new wind gust record in September.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 206 stations recorded a minimum temperature below freezing in November while zero stations reached or exceeded 100°F at least once during the month. Statewide extremes from the CDEC network of temperature gages are shown

below. Also shown are the monthly average extremes from the CIMIS network. A table of regional average minimum, mean, and maximum temperatures from the CDEC stations is also shown at the end of the summary.

Precipitation in November was ranged from dry in the northern part of the state to above average in the San Joaquin Valley and on the South Coast. For the CDEC precipitation gages for November 2011, the largest amount of precipitation recorded was at Gasquet Ranger Station in the North Coast region with 10.12 inches. This is 72% of the average precipitation for this station for November. At the other end of the spectrum, Death Valley recorded only 0.01 inches for the month which is 5% of average for the month. For the CIMIS network, Otay Lake in San Diego County topped the precipitation charts with 3.15 inches for the month and 7 stations recorded no precipitation. Some CIMIS gages may show large precipitation totals if the gages are not covered during irrigation activities so care should be given to review precipitation data used from this network.

The 8-Station Index for northern California precipitation recorded 2.7 inches in November. On average, 6 inches of precipitation is recorded for the 8-Station index in November. Statewide, the average precipitation for November was 66% of the long-term average based on the California Data Exchange Center (CDEC) gages. Precipitation percentages by region from the CDEC gages are shown in a table at the end of this document.

CoCoRaHS Update

November 2011 continues California's fourth year with CoCoRaHS – the Community Collaborative Rain, Hail and Snow Network. This group uses citizen volunteers to record rain, hail and snow data. The users enter the data online at the CoCoRaHS web site. The web site provides the opportunity to see spatial detail of rain and snow patterns. A map from November 24, 2011 is shown at the end of the document. As of the end of November 2011, California has 833 volunteers signed up spanning 53 of California's 58 counties. The counties without volunteers are Alpine, Colusa, Glenn, Modoc, and Tuolumne. The county with the most volunteers at the end of October is Sonoma with 91 volunteers. For the month of November, 9,911 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in November was in Del Norte County where 2.47 inches was recorded on 11/24/11. Seventy snowfall reports were recorded with the largest being 12 inches in Nevada County. Three hail reports were recorded in November with one in Ventura County, one in Los Angeles County, and one in Santa Barbara County. The largest reported hail stones were pea sized. To join CoCoRaHS or find more information, please visit <http://www.cocorahs.org>.

Snowpack and Water Supply Conditions

The automated snow sensor network in California showed a statewide average of 2 inches of snow water equivalent for the end of November. This is 44% of average for the date and only 7% of the April 1 average. The Water Supply Index for WY 2011 was wet for the Sacramento Basin and wet for the San Joaquin Basin. Water year 2010 resulted in a below normal category for the Sacramento Basin and above normal

category for the San Joaquin Basin for the Water Supply Index. The median initial outlook for WY2012 shows an above normal category for the Sacramento and a below normal category for the San Joaquin. Water supply information for California can be found at http://cdec.water.ca.gov/water_supply.html. A historical listing of water year categories for both basins can be found at <http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST>.

Drought Monitor and Seasonal Outlook

The maps for California for October 25, 2011 and November 29, 2011 are shown below. The Drought Monitor maps can be found on the National Drought Mitigation Center's (NDMC) website <http://drought.unl.edu/dm/>. These maps are largely a reflection of precipitation and soil moisture deficit estimates. As of the November 29th depiction, California is depicted as drought free except for portions of the desert regions and far northern reaches of the state which are categorized as abnormally dry. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for December through February from NOAA depicts California developing drought conditions in the southern half of the state. This forecast is based primarily on climatology and forecast models. Updates are provided twice per month. Maps and information can be found at http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html.

The California Nevada River Forecast Center developed some drought monitoring tools for California that are now available on CDEC and are automatically updated. These tools look at the frequency associated with precipitation deficits for the Northern Sierra Eight Station Index and the San Joaquin Five Station Index. Another tool looks at the frequency of end-of-month storage for select reservoirs in California. The frequencies of the observations are related to the Drought Monitor's drought categories D0 through D4. The links can be found on the State Climatologist web page and are repeated here:

<http://cdec.water.ca.gov/cdecapp/drought/getres.action> (California Reservoirs – Drought Status)
<http://cdec.water.ca.gov/cdecapp/drought/get8SI.action> (Sacramento River Drought Status)
<http://cdec.water.ca.gov/cdecapp/drought/get5SI.action> (San Joaquin River Status)

For November, the Eight Station Index and the Five Station Index are in drought free conditions for a 12-month and 24 month period largely due to last year's bounty. All reservoirs have above average storage for this time of year.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) has transitioned back toward La Niña conditions. Equatorial sea surface temperature anomalies for the tropical Pacific have been mostly negative with values of -1.2°C in the Niño 3.4 at the end of October. The September through November 3-month running mean of the Ocean Niño Index (ONI) is -0.7. This is the first value to cross the -0.5 degree threshold. Five consecutive ONI values need to be below the threshold of -0.5 for conditions to be classified as a La Niña event and five consecutive values above the 0.5 threshold need to be observed

for classification as an El Niño event. Most forecast models have the tropical sea surface temperatures either continuing in La Nina conditions or returning to ENSO neutral conditions by the end of winter. More information can be found at the Climate Prediction Center's web site:

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/

Updates are posted weekly. The latest three month outlook (December through February) from NOAA indicates below normal temperatures for the entire State. For precipitation, equal chances of above or below normal conditions are forecast for the central part of the state with the exceptions of the northern part of the state (above average) and the southern (below average) region. Outlook plots and discussions can be found at <http://www.wrcc.dri.edu/longrang/>. General weather information of interest can be found at <http://www.noaawatch.gov/>. For anomaly information please see http://www.wrcc.dri.edu/anom/cal_anom.html.

Agricultural Data

November 2011 saw the harvesting process continue and fall planting commence. Rice and cotton crops were harvested with most ratings good to excellent. In some places a second picking of cotton was made. Winter wheat crops continued to be planted and nearly 2/3 of the crop had emerged by the end of the month. Table grape harvest began to wind down and wine grape harvest had completed. Rain and frost impacted wine grapes in the northern part of the State. Harvests of pineapple, figs, kiwifruit, apples, pomegranate, carrots, cabbage, tangerine, and Satsuma mandarins continued. Pistachio and walnut harvest wrapped up while almond stockpiles were hulled. Winter vegetables were planted in Tulare County. Range conditions ranged from good to poor condition. Calving season continued while supplemental feeding of livestock increased. Bees were moved to winter locations. For further crop information see <http://www.nass.usda.gov/index.asp>.

Other Climate Summaries

[California Climate Tracker](#) (new product of Western Region Climate Center)

[Golden Gate Weather Service Climate Summary](#)

[NOAA Monthly State of the Climate Report](#)

Statewide Extremes (CDEC)

High Temperature – 96°F (Cahuilla, Colorado River Desert)

Low Temperature – -22°F (Casa Vieja Meadows, Tulare)

High Precipitation – 10.12 inches (Gasquet Ranger Station, North Coast)

Low Precipitation – 0.01 inches (Death Valley, South Lohantan)

*Examination of hourly record indicates that temperature gage stopped at -22°F for several hours on multiple nights. Real temperature may have been colder.

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 78.5°F (Seeley, Imperial County)

Low Average Minimum Temperature – 20.9°F (Alturas, Modoc County)

High Precipitation – 3.15 inches (Otay Lake, San Diego County)*

Low Precipitation – 0 inches (7 stations)

*Sometimes irrigation water from sprinklers gets counted as precipitation if the gage is not covered during irrigation.

Statewide Precipitation Statistics

Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Nov	Oct-Nov	Stations	Nov	Oct-Nov	Nov	Oct-Nov
North Coast	0.27	5	5	5	17	13	13	62.3%	82%
SF Bay	0.03	2	2	2	6	6	6	65.6%	86%
Central Coast	0.06	3	3	3	11	8	8	118.9%	131%
South Coast	0.06	3	3	3	14	13	13	129.0%	132%
Sacramento River	0.26	5	5	5	41	34	32	50.1%	75%
San Joaquin River	0.12	6	6	6	24	20	20	43.0%	74%
Tulare Lake	0.07	5	5	5	28	26	26	81.5%	122%
North Lahontan	0.04	3	3	3	13	10	9	31.9%	49%
South Lahontan	0.06	3	3	3	15	9	9	65.1%	90%
Colorado River	0.03	1	1	1	6	4	4	103.4%	61%
Statewide Weighted Average	1	36	36	36	175	143	140	65.8%	87%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	22	27.0	42.3	67.4
SF Bay	8	36.3	48.7	68.1
Central Coast	12	32.8	50.1	79.8
South Coast	45	34.1	52.8	81.6
Sacramento	81	23.3	41.3	65.7
San Joaquin	45	21.2	40.2	66.8
Tulare Lake	17	13.9	35.5	62.6
North Lahontan	25	11.1	33.6	56.0
South Lahontan	14	16.9	38.7	65.2
Colorado River Desert	8	37.3	57.9	87.9
Statewide Weighted Average	277	24.5	42.5	68.2

U.S. Drought Monitor

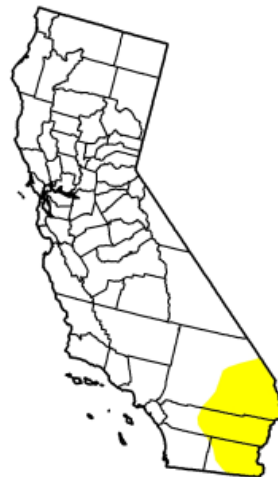
California

October 25, 2011
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	89.25	10.75	0.00	0.00	0.00	0.00
Last Week (10/18/2011 map)	89.25	10.75	0.00	0.00	0.00	0.00
3 Months Ago (07/26/2011 map)	85.34	14.66	0.00	0.00	0.00	0.00
Start of Calendar Year (12/28/2010 map)	98.62	1.38	0.00	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	89.14	10.86	0.00	0.00	0.00	0.00
One Year Ago (10/19/2010 map)	88.08	11.92	6.07	0.24	0.00	0.00

Intensity:

 D0 Abnormally Dry	 D3 Drought - Extreme
 D1 Drought - Moderate	 D4 Drought - Exceptional
 D2 Drought - Severe	



The Drought Monitor focuses on broad-scale conditions.
Local conditions may vary. See accompanying text summary
for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, October 27, 2011
David Miskus, NOAA/NWS/NCEP/CPC

U.S. Drought Monitor

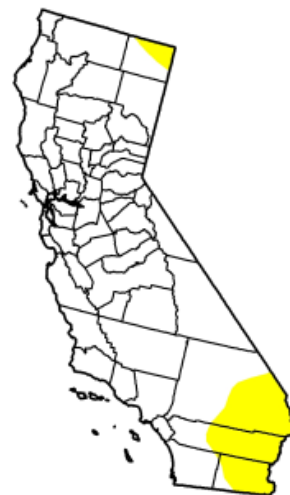
California

November 29, 2011
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	88.32	11.68	0.00	0.00	0.00	0.00
Last Week (11/22/2011 map)	88.42	11.58	0.00	0.00	0.00	0.00
3 Months Ago (08/30/2011 map)	92.14	7.86	0.00	0.00	0.00	0.00
Start of Calendar Year (12/28/2010 map)	98.62	1.38	0.00	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	89.14	10.86	0.00	0.00	0.00	0.00
One Year Ago (11/23/2010 map)	90.14	9.86	2.41	0.00	0.00	0.00

Intensity:

 D0 Abnormally Dry	 D3 Drought - Extreme
 D1 Drought - Moderate	 D4 Drought - Exceptional
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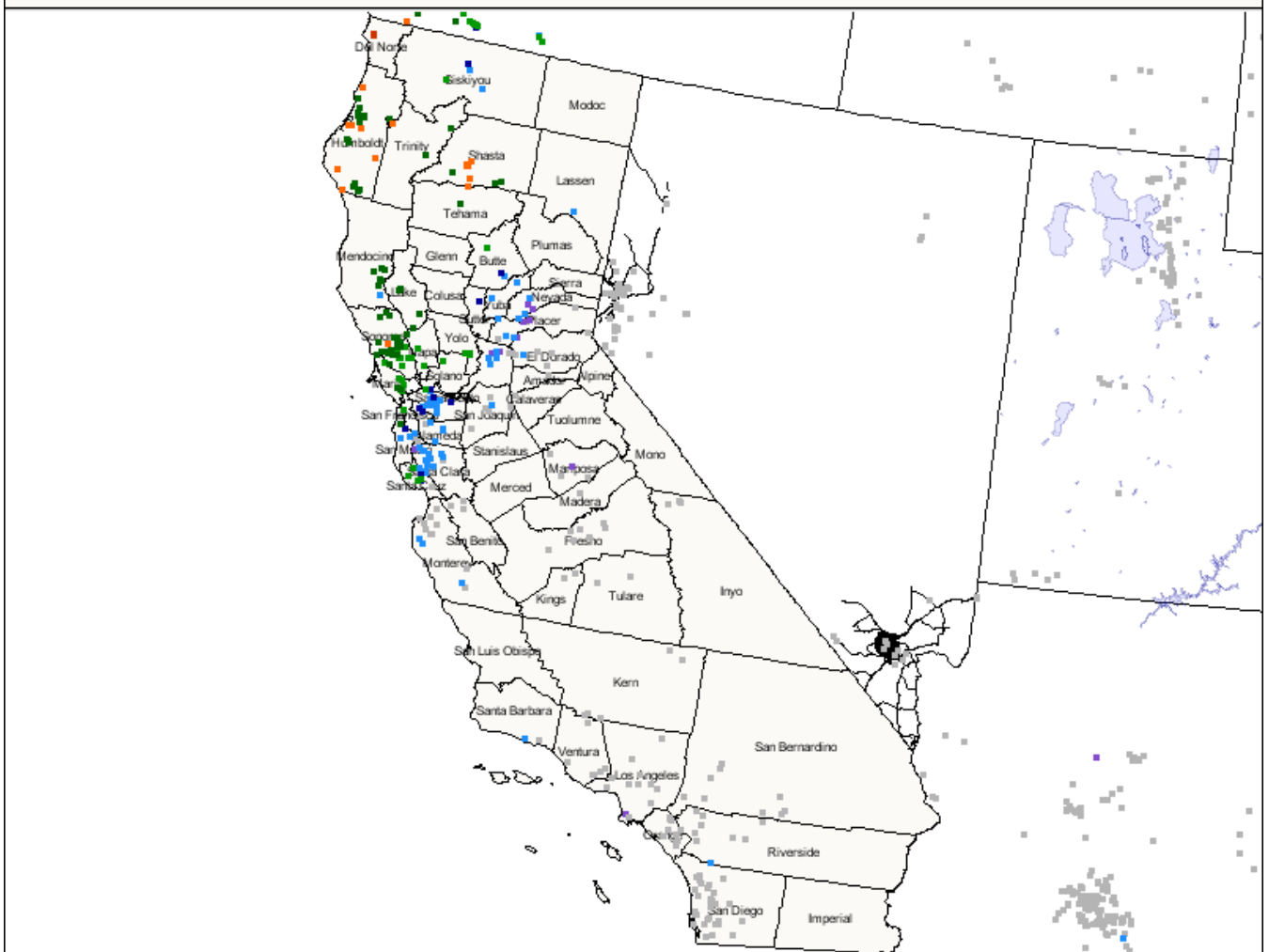


Released Thursday, December 1, 2011
David Miskus, NOAA/NWS/NCEP/Climate Prediction Center

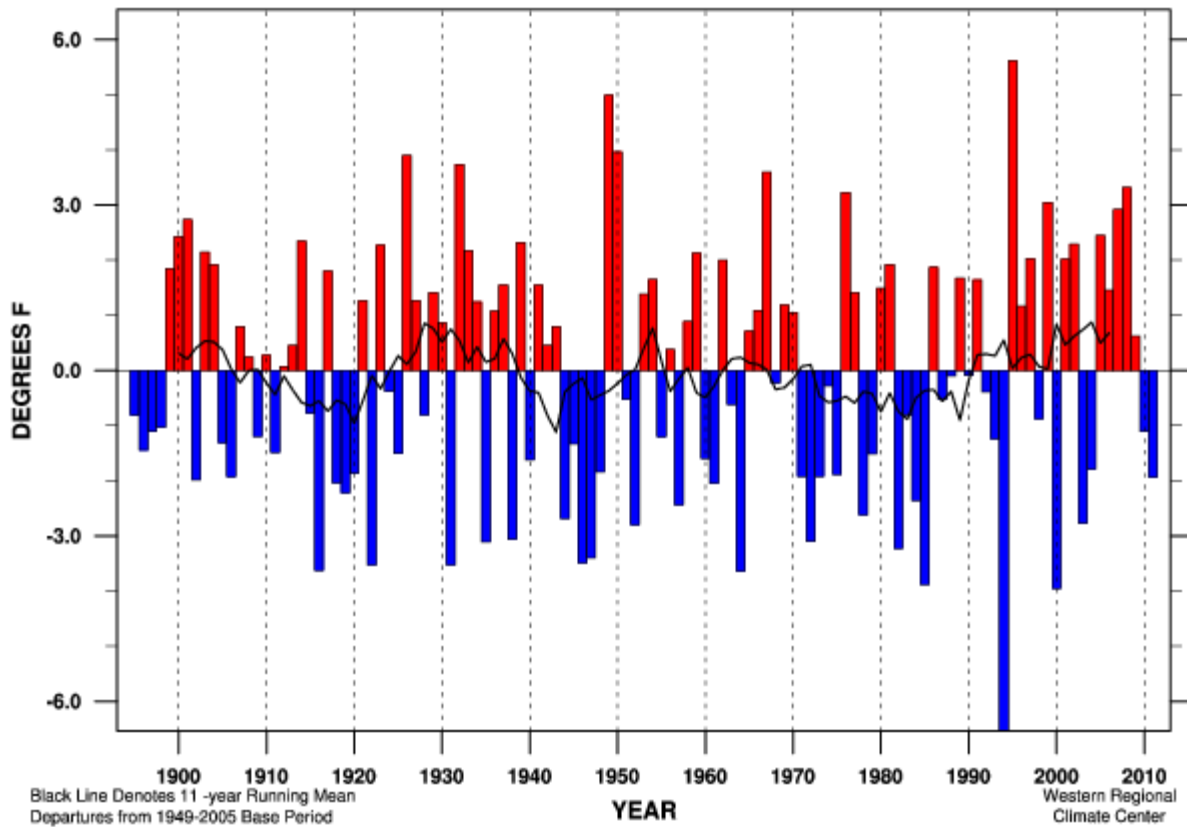
Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

California 11/24/2011

0.0 Trace 0.01 - 0.12 0.13 - 0.24 0.25 - 0.61 0.62 - 1.47 1.48 - 2.21 2.22 - 2.47



California Statewide Mean Temperature Departure November



Linear Trend 1895-present	+ 0.17 ± 1.21°F/100yr	
Linear Trend 1949-present	- 0.03 ± 3.34 °F/100yr	
Linear Trend 1975-present	+ 3.29 ± 7.95 °F/100yr	
Warmest Year	53.7 °F (+ 5.6 °F) in 1995	MEAN 48.1°F
Coldest Year	41.6 °F (- 6.5 °F) in 1994	STDEV 2.41°F
November	2011 46.2 °F (- 1.9 °F)	RANK 24 of 117